

## REMARKS

### **1. Claims Amendments.**

Claims 1-20 were previously cancelled without prejudice.

Claim 21 has been amended to correct some spelling errors and to better comport the claim language to USPTO preferred style, and to incorporate the subject matter of Claim 29. Claim 21 also has been amended to limit the number of carbon atoms in the cycloalkynyl. No new matter has been added.

Claim 22 has been amended to correct some spelling errors, to remove redundant language, and to better comport the claim language to USPTO preferred style, and to incorporate the subject matter of Claim 37. Claim 22 also has been amended to limit the number of carbon atoms in the cycloalkynyl and to clarify that the rings are fused, which is a more descriptive term than coupled. No new matter has been added.

Claim 23 has been amended to better comport the claim language to USPTO preferred style. No new matter has been added.

Claim 24 has been amended to better comport the claim language to USPTO preferred style. Claim 24 also has been amended to delete zinc chloride as a Lewis acid. No new matter has been added.

Claim 25 has been amended to better comport the claim language to USPTO preferred style. No new matter has been added.

Claim 26 has been amended to better comport the claim language to USPTO preferred style. No new matter has been added.

Claim 27 has been amended to better comport the claim language to USPTO preferred style. No new matter has been added.

Claim 28 has been amended to better comport the claim language to USPTO preferred style. No new matter has been added.

Claim 29 has been cancelled without prejudice.

Claim 30 has been amended to better comport the claim language to USPTO preferred style. No new matter has been added.

Claim 31 has been amended to better comport the claim language to USPTO preferred style. No new matter has been added.

Claim 32 has been amended to better comport the claim language to USPTO preferred style. Claim 32 also has been amended to delete zinc chloride as a Lewis acid. No new matter has been added.

Claim 33 has been amended to better comport the claim language to USPTO preferred style. No new matter has been added.

Claim 34 has been amended to better comport the claim language to USPTO preferred style. No new matter has been added.

Claim 35 has been amended to better comport the claim language to USPTO preferred style. No new matter has been added.

Claim 36 has been amended to better comport the claim language to USPTO preferred style. No new matter has been added.

Claim 37 has been cancelled without prejudice.

Claim 38 has been amended to better comport the claim language to USPTO preferred style. No new matter has been added.

## **2. 35 USC §112 Rejections Are Moot.**

The above amendments to Claims 21 and 22 and the cancellation without prejudice of Claims 29 and 37 address the examiner's concerns under 35 USC 112, and Applicant requests that these grounds for rejection be withdrawn.

## **3. 35 USC §102 Rejections Are Moot.**

Claims 21-24, 26-29, 31, 32, and 34-37 have been rejected under 35 USC §102 as being anticipated by the Barakat Article, Barakat, et al., J. Of the Chem. Soc., pp. 3299-3300 (1955). Applicant traverses this rejection as the Barakat Article does not disclose, teach, or describe each and every element in the claims as currently pending in the present patent application. As the examiner knows, in order to properly anticipate Applicant's invention, as claimed, under 35 USC §102, each and every element of the claim in issue must be found, "either expressly or inherently described, in a single prior art reference." *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 1 USPQ2d 1081 (Fed.

Cir. 1986); see also *verdegall Bros. V. Union Oil Co. of California*, 814 F2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The absence of one element in the claim in issue from the cited prior reference negates anticipation. See *Atlas Powder Co. v. E.I. du Pont de Nemours & Co.*, 224 USPQ2d 409 (Fed Cir. 1984). Anticipation was intended to apply in this limited situation in which one prior art reference incorporates **all** of the elements of a claim in a subsequent invention because the nonobvious standard was intended to cover broader obvious leaps from a reference to a claim or from combined references to a claim. See *Titanium Metals Corp. v. Brenner*, 227 USPQ 773 (Fed. Cir. 1985).

The Barakat Article is not anticipatory of the present invention as claimed for several reasons. Although the Barakat Article document discloses the reaction of hydrazine with diacids, it also states that the reaction is performed in boiling dioxin in the presence of a catalyst (phosphoric oxide and zinc chloride) with a yield of 50%.

The anhydrous conditions described in the Barakat Article to promote the preparation of cyclic hydrazides involved on the formation of bis-acyl chloride is a type of intermediate reaction that reacts quite well with nucleophiles species; however, in the presence of water the obtained yields would be diminished by the hydrolysis of these intermediates, furnishing as recovered products the carboxylic acids used as starting material. The nucleophilic attack of the bis-acyl chloride at the carbonyl function by nitrogen atom of N'-phenyl-NN-phthaloylhydrazine in anhydrous conditions furnished the desired products. In the Barakat Article, the formation of an acyl chloride was carried out under anhydrous conditions generating exclusively bis-acyl chloride as the key intermediate. Presumably, using this same strategy to obtain the 5-nitro-phthalazin would be observed the hydrolysis of the bis-acyl chloride by the addition of an aqueous solution of hydrazine leading the Barakat Article process to provide lower yields of the desired product.

The present invention carries out this same kind of chemical transformation to obtain cyclic hydrazides using niobium pentachloride as reagent. However, the present invention uses an aqueous solution of hydrazine (40% w/v) to promote the nucleophilic attack at the carbonylic site of the niobates intermediates. Contrary to the initial conditions employed in the Barakat Article, the present invention involve hydrazide

structures employing reactional mixtures containing water associated with nucleophiles. The approach described in the present invention represents a significant advantage step to the synthesis of luminol and hydrazines or hydrazides because under aqueous conditions using niobium pentachloride the present process is more reliable and inexpensive than the procedures of the cited art. The success of this nucleophilic attack can be explained by (1) the use of hydrazine in aqueous solution reacting with niobate formed originally from 3-nitro-phthalic acid, which was generated through the formation of acyl chloride by donation of chloride species from niobium pentachloride in the initial step and (2) the addition of an aqueous solution of hydrazine in the second step to produce the 5-nitro-phthalazin 90-95% yield of the process, as disclosed in the present patent application.

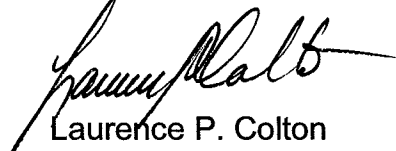
Thus the present invention differs from the cited art because the reaction disclosed is not processed in boiling dioxin or any other harsh condition and has a higher yield. In fact, the present patent specification clearly states, in paragraph [0031] that the reaction occurs at room temperature. Also, paragraph [0038] of Example 1 clearly states that the yield is 90-95%. Therefore the present invention is different from the prior art since no harsh conditions are used but instead the reaction is performed at room temperature and the yield of such reaction is much higher than the yield disclosed in prior art.

Accordingly, the Baraket Article cannot anticipate the claims of the present patent application because the Barakat Article does not disclose each and every element of Applicant's invention as claimed. Further, the Barakat Article discloses a process that is carried out under harsher conditions and has lower yields than the present invention as disclosed and claimed. As such, Applicant requests that the examiner reconsider and withdraw this rejection.

## CONCLUSION

Applicant submits that the patent application is in condition for allowance and requests such actions. If there are any questions, direct them to the below signed attorney.

Respectfully submitted,  
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